

CLAIMS

1. A method of sending data packets in an access network or satellite infrastructure network supporting sub-networks such as IP logical sub-networks, private
5 networks, or multi-recipient groups, combining different terminal stations of the network, in which method each data packet is associated with an addressing header and each terminal station of the network is associated with a satellite terminal or a ground station located in the
10 coverage of a particular spot of a particular satellite, wherein the addressing header of each data packet further contains a "label" field containing an identifier characteristic of a sub-network to which said terminal station belongs and the spot in which the satellite
15 terminal or the ground station with which said terminal station is associated is located.

2. A method according to claim 1, wherein data packets are sent with no connection between the sending satellite
20 terminal or the sending ground station and the receiving satellite terminal or the receiving ground station.

3. A method according to claim 1, wherein the terminal stations of the network connected to the satellite
25 terminals or to the ground stations consist of user terminals, routers, and data or service servers, in particular address resolution protocol servers.

4. A method of determining and optimizing labels for
30 implementing the method according to claim 1, the method consisting of installing a centralized label determination server (hereinafter referred to as a "label server") in each Internet service provider using the satellite network, communicating the label (Label_SARPl)
35 corresponding to said label server to each satellite terminal or to each ground station of the network at the time of registration with the Internet service provider

of a user whose user terminal is connected to said satellite terminal or to said ground station, having the satellite terminal or the ground station to which is connected the user terminal of a user requiring to send data to a target terminal station connected to another satellite terminal or another ground station send to the label server of its Internet service provider, using the label (Label_SARPl) corresponding to the label server, a "Label request" data packet containing the IP address of the target, and having the label server send to the satellite terminal or to the sending ground station, using the label corresponding to said sender, a "Label response" data packet containing the label (Label_n) of the sub-network to which the target terminal station belongs.

5. A method according to claim 4, wherein the "Label response" data packet supplied by the label server contains a label that is established as a function of the hardware location of the terminal to which the target terminal station is connected.

6. A method according to claim 4, wherein, during interrogation of the label server by submitting a "Label request" data packet corresponding to a target terminal station address, if the label server finds a label of a router by way of response to the request, said label server sends said router a "Label optimization" data packet containing the address of the target terminal station by way of a destination address and any ground station belonging to the satellite network that is used by its router to forward said "Label optimization" data packet to another router sends back to the label server an indication to the effect that the router label (Label_R1, Label_R2) to be retained for that target is the label of the router to which said ground station forwards the "Label optimization" data packet.

7. A method according to claim 6, wherein the "Label optimization" data packet has a limited lifetime outside the satellite network in order for it to be eliminated spontaneously as soon as transmitting it from one ground station to another is no longer considered to be able to optimize the routing.
8. A method according to claim 1, wherein the data packets are containers adapted to contain, among other things, IP packets, i.e. packets conforming to the standards for transfer of data in non-connected mode over Internet Protocol networks.
9. A satellite terminal of a satellite telecommunications system using the method according to claim 1, the terminal having a table for each Internet service provider with which are associated user terminals connected to satellite terminals, said table establishing the relationship between target user terminal addresses and the labels associated with them, and the terminal listening to receiving labels of sub-networks to which the user terminals associated with it belong.
10. A satellite terminal according to claim 9, storing the sending label of the ground station with which it is associated, by means of which label it can send broadcast data packets to said ground station.
11. A satellite terminal according to claim 9, wherein a terminal station and said satellite terminal constitute one and the same equipment unit and are combined in the same device.
12. A satellite terminal according to claim 11, wherein the terminal station is a user terminal which, with said satellite terminal, constitutes one and the same

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13. An Internet service provider of a satellite telecommunications system implementing the method according to claim 1, the provider being associated with a label server adapted to supply an addressing label as a function of a target terminal station address of a data packet.

15. A satellite according to claim 14, containing said table.

17. A ground station of a telecommunications system
25 implementing the method according to claim 6, the station
including means for recognizing a "Label optimization"
data packet coming from a label server and passing
through said ground station to a target via a router
connected to the ground station, and for sending the
30 label server an indication to the effect that the label
to be taken into account for said target is that to which
said ground station forwards the "Label optimization"
data packet.

35 18. A satellite telecommunications system for
implementing the method according to claim 1, the system
including at least one satellite terminal according to

claim 9, at least one Internet service provider according to claim 13, and at least one satellite according to claim 14.

- 5 19. A satellite telecommunications system according to claim 18 for implementing the method according to claim 6, the system including at least one ground station according to claim 17.

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